

Appendix K: Comparison of Alternatives by Objective and Strategy

Squaw Creek NWR Objectives and Strategies by Alternative

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<i>Goal 1 Habitat: Manage a diversity of habitat to benefit threatened and endangered species, waterfowl, other migratory birds, and indigenous species in the Lower Missouri River floodplain ecosystem and the Central Tallgrass Prairie ecosystem.</i>				
1.1 Objective: Wetlands – Manage 3,409 acres of wetland (877.5 acres of semipermanent water and 2,531 acres of seasonally flooded impoundments) which will be manipulated to provide open water, exposed shoreline and mud-flats, and shallow wetlands traditionally preferred by migratory birds and other wetland associated wildlife species. <u>Strategies:</u> Continue to manipulate water levels to maintain existing habitat structure and waterfowl use.	1.1 Objective: Wetlands – Manage 1,227 acres of wetlands and convert 2,181 managed wetlands to wet prairie. <u>Strategies:</u> Same as Alternative A.	1.1 Objective: Wetlands – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.	1.1 Objective: Wetlands – Same as Alternative A except will manage 3,452 acres of wetlands will be managed for the habitats cited. <u>Strategies:</u> Convert 42 acres of bottomland mesic prairie to managed wetland; Manage water levels for resting and roosting waterfowl; use mechanical or chemical treatment or burning to provide open water, reduce undesirable plants, and encourage preferred seed producing plants; maintain cattail stands; use GPS to track wetland management activities; add seasonal tractor operator.	1.1 Objective: Wetlands – Same as Alternative A. <u>Strategies:</u> Same as Alternative D, with less opportunity for public access.

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

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<p>1.2 Objective: Wet Prairie – Conserve and enhance the largest remnant wet prairie in Missouri by preserving and maintaining the integrity of at least 1,077 acres of wet prairie through elimination of non-native species and restoration of associated natural functioning systems (e.g. hydraulic systems, fire, etc.).</p> <p><u>Strategies:</u> Lower water level during summer to establish moist-soil vegetation; reflood units in the fall.</p>	<p>1.2 Objective: Wet Prairie – Same as Alternative A but at least 3,259 acres of wet prairie managed by 2018.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.2 Objective: Wet Prairie – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.2 Objective: Wet Prairie – Same as Alternative A.</p> <p><u>Strategies:</u> Conduct species surveys; inventory wet prairie vegetation; reduce exotic invasives through prescribed burning; add a full-time prescribed fire specialist; employ chemical applications to control invasives; restore prairie cordgrass south of Pintail Pool.</p>	<p>1.2 Objective: Wet Prairie – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative D.</p>

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<p>1.3 Bottomland Mesic Prairie – Manage 291 acres of bottomland mesic prairie to provide quality nesting cover for nongame migratory birds as well as nesting and wintering cover for upland gamebird species, breeding waterfowl, and other associated wildlife species by maintaining, enhancing and restoring grasslands to a mixture of warm and cool season native grasses.</p> <p><u>Strategies:</u> Continue the use of prescribed fire to combat invasive species; work with volunteers to restore Loess Hill prairies.</p>	<p>1.3 Bottomland Mesic Prairie – Manage 870 acres of bottomland mesic prairie to provide quality nesting cover for nongame migratory birds as well as nesting and wintering cover for upland gamebird species, breeding waterfowl, and other associated wildlife species by maintaining, enhancing and restoring grasslands to a mixture of warm and cool season native grasses.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.3 Bottomland Mesic Prairie – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.3 Bottomland Mesic Prairie – Manage 508 acres of bottomland mesic prairie habitat to provide quality nesting cover for nongame migratory birds as well as nesting and wintering cover for upland gamebird species, breeding waterfowl, and other associated wildlife species by maintaining, enhancing and restoring grasslands to a mixture of warm and cool season native grasses. This habitat will be managed to maximize native vegetation abundance, minimize fragmentation and maximize the minimum patch size for area-dependent species.</p> <p><u>Strategies:</u> Conduct species surveys and monitoring; use seasonal, rotational prescribed burning to combat invasives; add a full-time fire specialist position; use chemical applications to control invasives; convert 200 acres of agricultural cropland and 59 acres of old field to 259 acres of native bottomland mesic prairie; use basic farming techniques to prepare a seedbed; plant native forbs in existing grassland areas following prescribed burning.</p>	<p>1.3 Bottomland Mesic Prairie – Manage 570 acres of bottomland mesic prairie to provide quality nesting cover for nongame migratory birds as well as nesting and wintering cover for upland gamebird species, breeding waterfowl, and other associated wildlife species by maintaining, enhancing and restoring grasslands to a mixture of warm and cool season native grasses.</p> <p><u>Strategies:</u> Same as Alternative C.</p>

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<p>1.4 Loess Hills Prairie – Manage 221 acres of Loess Hill prairie habitat to provide quality nesting cover for nongame migratory birds and other associated wildlife species by maintaining, enhancing and restoring grasslands to a mixture of warm and cool season native grasses. This habitat will be managed to maximize native vegetation abundance, minimize fragmentation and maximize the minimum patch size for area-dependent species. <u>Strategies:</u> Continue the use of prescribed fire to combat invasive species; work with volunteers to restore Loess Hill prairies.</p>	<p>1.4 Loess Hills Prairie – Same as Alternative A. <u>Strategies:</u> Conduct species surveys and monitoring; use seasonal prescribed burning, continue to restore native warm season grasses and forbs in the Loess Bluff hills, hand-cutting invading tree species and brush; convert 78 acres of agricultural land to native Loess Hill prairie; use seasonal rotational prescribed burning for upland areas; plant native forbs; maximize grassland blocks and minimize fragmentation and edge effect by removing fence/tree rows where appropriate.</p>	<p>1.4 Loess Hills Prairie – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>1.4 Loess Hills Prairie – Manage 299 acres of Loess Hills Prairie for the purposes described under Alternative A. <u>Strategies:</u> Same as Alternative B with addition of full-time fire specialist.</p>	<p>1.4 Loess Hills Prairie – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>
<p>1.5 Loess Hill Forest – Manage 378 acres of Loess Hills forest for the benefit of associated plant and wildlife species. <u>Strategies:</u> Conduct studies on the effects of browsing.</p>	<p>1.5 Loess Hill Forest – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>1.5 Loess Hill Forest – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>1.5 Loess Hill Forest – Same as Alternative A. <u>Strategies:</u> Conduct species surveys; conduct forest inventory; map distribution of Illinois garlic mustard.</p>	<p>1.5 Loess Hill Forest – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>

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<p>1.6 Objective: Bottomland Forest – Manage the 1,000 acres of bottomland forest to provide optimum nesting, resting and feeding habitats during breeding and migrational periods for migratory waterfowl and songbirds and to benefit threatened and endangered species other migratory birds, and indigenous species. <u>Strategies:</u> Conduct studies on the effects of browsing.</p>	<p>1.6 Objective: Bottomland Forest – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>1.6 Objective: Bottomland Forest – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>1.6 Objective: Bottomland Forest – Same as Alternative A. <u>Strategies:</u> Flood bottomlands within Davis Creek units during spring and fall migration; move wood duck nesting structures to bottomland and upland woodland sites; complete a forest resources inventory; study causes for the loss of bottomland forests understory; map distribution of Illinois garlic mustard; use prescribed burning to reduce invasive species.</p>	<p>1.6 Objective: Bottomland Forest – Same as Alternative A. <u>Strategies:</u> Same as Alternative D.</p>
<p>1.7 Objective: Croplands and Old Fields – Maintain the 579 cropland acres and 59 old field acres existing in 2003. <u>Strategies:</u> Continue agreements with cooperative farmers to leave one-third of crop standing.</p>	<p>1.7 Objective: Croplands – Convert the 501 cropland acres existing in 2003 to bottomland mesic prairie and convert 78 acres of croplands to Loess Bluff prairie and 59 acres of old field to bottomland mesic prairie. <u>Strategies:</u> Monitor wildlife use of croplands; continue annual cooperative farming agreements; implement phased reductions in cropland; implement crop rotation.</p>	<p>1.7 Objective: Croplands – Same as Alternative A <u>Strategies:</u> Same as Alternative A.</p>	<p>1.7 Objective: Croplands – Implement a long range plan to convert 279 acres of the 579 cropland acres and 59 acres of existing old field to mesic bottomland prairie and Loess Hill prairie. The reduction will be accomplished by 2015 through attrition of current cooperators. <u>Strategies:</u> Same as Alternative B.</p>	<p>1.7 Objective: Croplands – Reduce the cropland acreage to 300 acres, with resulting increases in bottomland mesic prairie. <u>Strategies:</u> Same as Alternative A.</p>

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<p>1.8 Objective: Exotic, Invasive and Nuisance Species – Control and reduce the presence of exotic, invasive and nuisance species of plants and animals on the Refuge. Non-native species will not exceed 2003 density or distribution levels. <u>Strategy:</u> Continue existing burn plan.</p>	<p>1.8 Objective: Exotic, Invasive and Nuisance Species – Same as Alternative A. <u>Strategies:</u> Use GIS technology to assess problem of invasive exotic species; use appropriate integrated species management techniques; work with volunteers in manual control efforts of Illinois garlic mustard; continue active monitoring to detect invasive species; use short-term farming to deter invasive species; continue monitoring gypsy moths.</p>	<p>1.8 Objective: Exotic, Invasive and Nuisance Species – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>1.8 Objective: Exotic, Invasive and Nuisance Species – Same as Alternative A. <u>Strategies:</u> Same as Alternative B.</p>	<p>1.8 Objective: Exotic, Invasive and Nuisance Species – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>
<p>1.9 Land Acquisition – Working with willing sellers, acquire up to 400 acres in fee title of existing and restorable wetlands within the authorized Refuge boundaries. <u>Strategies:</u> Initiate action to identify willing sellers and to proceed with getting the acquisition proposal included in the Land Acquisition Priority System; prioritize acquisition of wetland and prairie habitat types.</p>	<p>1.9 Land Acquisition – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>1.9 Land Acquisition – Same as Alternative A. <u>Strategy:</u> Same as Alternative A.</p>	<p>1.9 Land Acquisition – Same as Alternative A. <u>Strategy:</u> Same as Alternative A.</p>	<p>1.9 Land Acquisition – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>

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<p>1.10 Objective: Watershed Improvement – Reduce sedimentation from soil erosion and improve water quality on Squaw Creek NWR from private lands in the 60,000-acre upstream watershed using conservation practices fostering improved soil and water uses. By 2010, approximately 100 percent of the goals established in the AgNPS project in Squaw Creek will be accomplished, including erosion practices, water quality, riparian conservation and nutrient management.</p> <p><u>Strategies:</u> Continue work with Partners for Fish and Wildlife, the Holt County Soil and Water Conservation District, and the Natural Resources and Conservation Service to improve water quality and reduce peak flows entering Squaw Creek; continue to provide financial incentives to private landowners through the cited partners to implement conservation measures within the Squaw Creek and Davis Creek watershed; monitor water quality; look for opportunities to purchase land from willing sellers within authorized boundaries.</p>	<p>1.10 Objective: Watershed Improvement – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.10 Objective: Watershed Improvement – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.10 Objective: Watershed Improvement – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.10 Objective: Watershed Improvement – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

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<p>1.11 Objective: Wildlife Management District – Develop, improve and maintain native riparian, wetland, and grassland habitats consistent with the existing dominant vegetative structure (non-agricultural crop) contributions to soil and water conservation within the Management District and also benefitting a broad spectrum of both game and non-game migratory birds and other resident wildlife species.</p> <p><u>Strategies:</u> Continue current surveys and monitoring.</p>	<p>1.11 Objective: Wildlife Management District – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.11 Objective: Wildlife Management District – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>1.11 Objective: Wildlife Management District – Same as Alternative A.</p> <p><u>Strategies:</u> Actively manage established native grasslands using prescribed fire and chemical treatments for invasive species; work with easement owners to convert former croplands; develop or restore riparian and wetland sites on easement properties; monitor grassland to formulate an annual strategy; fence riparian areas to prevent damage from cattle; continue to participate in the private lands program when possible.</p>	<p>1.11 Objective: Wildlife Management District – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>
<p>Goal 2 Wildlife: Conserve species indigenous to the Refuge, the Lower Missouri River Ecosystem, and the Central Tallgrass Prairie Ecosystem with emphasis on those species identified in the Service Fish and Wildlife Resource Conservation Priorities.</p>				
<p>2.1 Objective: Regional Shorebird Designation – Designation of Squaw Creek NWR as a regional shorebird site of the Western Hemispheric Shorebird Reserve Network (WHSRN) by 2005.</p> <p><u>Strategies:</u> Conduct fall and spring migration surveys to document shorebird use; complete a nomination form.</p>	<p>2.1 Objective: Regional Shorebird Designation – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.1 Objective: Regional Shorebird Designation – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.1 Objective: Regional Shorebird Designation – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.1 Objective: Regional Shorebird Designation – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

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<p>2.2 Objective: Population Counts – Obtain annual peak population counts and use-days for Bald Eagles, Snow Geese, and other waterfowl and other indicator species using procedures outlined in the Wildlife Inventory Plan. <u>Strategies:</u> Continue current population counts, including Bald Eagles, waterfowl, shorebirds, marsh birds, and deer counts.</p>	<p>2.2 Objective: Population Counts – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.2 Objective: Population Counts – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.2 Objective: Population Counts – Same as Alternative A. <u>Strategies:</u> Use most efficient technology available; maintain a high level of disease monitoring during spring and fall migration; monitor encroachment by non-native species; document use of different habitats by indicator species; monitor marsh and water bird nesting; continue inventory of plant and wildlife species to determine long-term monitoring needs.</p>	<p>2.2 Objective: Population Counts – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>
<p>2.3 Objective: Waterfowl Use Days – Maintain annual waterfowl use day levels of a minimum of 5 million by providing adequate habitat as discussed under the Habitat Goal and based on a 5-year running average of waterfowl data, excluding Snow Geese. <u>Strategies:</u> Monitor arrivals and concentration build-ups in accordance with the Wildlife Inventory Plan; monitor waterfowl activity and concentration during migration; enforce FWS regulations on fee title and easement wetlands.</p>	<p>2.3 Objective: Waterfowl Use Days – Waterfowl use days will decrease by approximately 60 percent to approximately 2 million use days, in response to a comparable decrease in wetland acres and a corresponding increase in wet prairie. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.3 Objective: Waterfowl Use Days – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.3 Objective: Waterfowl Use Days – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.3 Objective: Waterfowl Use Days – Waterfowl use days will increase by approximately 5 percent to approximately 5.3 million use days in response to a comparable increase in wetland acres and corresponding decrease in other habitats. <u>Strategies:</u> Same as Alternative A.</p>

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<p>2.4 Objective: Reduction of Snow Geese – Actively assist international efforts to reduce the mid-continent population of Snow Geese by at least 5 percent each year until the Arctic Goose Working Group reduction goal has been achieved. <u>Strategies:</u> Actively discourage Snow Geese from using Refuge croplands; continue to provide open water for roosting in an area that provides hunting opportunities off-Refuge; increase the effort to obtain Snow Geese neck collar readings during spring and fall migrations.</p>	<p>2.4 Objective: Reduction of Snow Geese – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.4 Objective: Reduction of Snow Geese – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.4 Objective: Reduction of Snow Geese – Same as Alternative A, with addition of initiating a spring Snow Goose hunt within 1 year of completion of the CCP. <u>Strategies:</u> Offer spring Snow Goose hunt within 1 year of plan completion; reduce cropland from 579 acres to 300 acres by 2015; actively discourage Snow Geese from using Refuge croplands; continue to maintain open water in Eagle and Pelican pools; increase the effort to obtain Snow Geese neck collar readings during spring and fall migrations.</p>	<p>2.4 Objective: Reduction of Snow Geese – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>
<p>2.5 Objective: White-tailed Deer Management – Manage the size of the white-tailed deer herd on the Refuge through controlled hunts to reduce the Refuge white-tailed deer herd to a fall relative density of 20 to 25 deer per square mile. <u>Strategies:</u> Monitor herd size and health; monitor habitat for damage; continue antlerless only deer hunts; initiate a research project to determine the effects of browse damage.</p>	<p>2.5 Objective: White-tailed Deer Management – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.5 Objective: White-tailed Deer Management – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.5 Objective: White-tailed Deer Management – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>2.5 Objective: White-tailed Deer Management – <u>Strategies:</u> Same as Alternative A.</p>

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<p>2.6 Objective: Bald Eagle – Maintain the bottomland cottonwood forest areas and isolated mature cottonwood stands that provide roosting and nesting sites and that exist in 2004 and continue to provide habitat that maximizes Bald Eagle use days during fall and winter migration periods.</p> <p><u>Strategies:</u> Manage riparian cottonwood forests to ensure sustained stands of mature roost and nest trees; develop designated regeneration sites that will favor seedling development; manage public access to assure adequate habitat is provided.</p>	<p>2.6 Objective: Bald Eagle – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.6 Objective: Bald Eagle – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.6 Objective: Bald Eagle – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.6 Objective: Bald Eagle – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>
<p>2.7 Objective: Eastern Massasauga Rattlesnake – Maintain existing wet prairie habitat of 1,077 acres existing in 2003 to maintain the habitat used by eastern Massasauga rattlesnakes on Squaw Creek NWR (see Object 1.2 regarding habitat acreage). The population numbers and habitat use will be monitored to assess the response to the habitat manipulation.</p> <p><u>Strategies:</u> Continue to participate in research efforts; continue to monitor local population status; participate in cooperative studies.</p>	<p>2.7 Objective: Eastern Massasauga Rattlesnake – Increase wet prairie habitat from 1,077 acres existing in 2003 to 3,259 acres by 2018 will enhance the habitat used by the eastern Massasauga rattlesnake on the Refuge (see objective 1.2 regarding habitat). The population numbers and habitat use will be monitored to assess the response to habitat manipulation.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.7 Objective: Eastern Massasauga Rattlesnake – Same as Alternative A.</p> <p><u>Strategy:</u> Same as Alternative A.</p>	<p>2.7 Objective: Eastern Massasauga Rattlesnake – Maintain existing wet prairie habitat of 1,077 acres and increase bottomland mesic prairie by 217 acres for a total of 508 acres.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.7 Objective: Eastern Massasauga Rattlesnake – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

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<p>2.8 Objective: Least Bittern – By providing hemimarsch cattail habitat suitable for nesting, the Refuge will benefit the Least Bittern, which is ranked as an “impaired” species by the State of Missouri. The population distribution and numbers will be monitored.</p> <p><u>Strategies:</u> Maintain the presence of cattail stands; continue to monitor nesting activity.</p>	<p>2.8 Objective: Least Bittern – Same as Alternative A but approximately 349 acres of hemi-marsh cattail habitat will be provided.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.8 Objective: Least Bittern – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.8 Objective: Least Bittern – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.8 Objective: Least Bittern – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>
<p>2.9 Objective: Passerine Species – The Refuge will support and follow the recommendations listed in Region 3’s Resource Conservation Priorities for the rare and declining passerine species identified in Appendix I within existing management resources. Management interest will focus upon species for which Squaw Creek NWR is or was within their primary range.</p> <p><u>Strategies:</u> Collect data from routine monitoring; conserve and restore critical habitat; support partners’ conservation efforts; encourage and support education efforts.</p>	<p>2.9 Objective: Passerine Species – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.9 Objective: Passerine Species – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.9 Objective: Passerine Species – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.9 Objective: Passerine Species – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

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<p>2.10 Objective: State Species of Concern – State of Missouri species of concern, such as long-tailed weasels, spotted skunks, and Franklin's ground squirrels, will be reported to Missouri Department of Conservation staff when observed on or near the Refuge.</p> <p><u>Strategies:</u> Report observations of state-listed species, including date and location, to the Department of Conservation.</p>	<p>2.10 Objective: State Species of Concern – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.10 Objective: State Species of Concern – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.10 Objective: State Species of Concern – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>2.10 Objective: State Species of Concern – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

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Goal 3 People: Visitors, nearby residents and other stakeholders will appreciate the natural resources and ecological processes and cultural resources of Squaw Creek NWR, will help achieve the objectives of the Refuge, and will support the Service's mission.				
3.1 Objective: Interpretation – Design, fund and implement interpretive programs and facilities that meet Service standards and that will attract and accommodate up to 130,000 visitors annually. <u>Strategies:</u> Continue to offer interpretive programs, tours and demonstrations as time and staffing allow.	3.1 Objective: Interpretation – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.	3.1 Objective: Interpretation – Design, fund and implement interpretive programs and facilities that meet Service standards and that will attract and accommodate up to 175,000 visitors annually by 2013 with a subsequent annual increase of 2 percent throughout the life of this plan. <u>Strategies:</u> Develop clear Refuge themes related to key resource issues; replace the auto tour leaflet with signs and sound posts; develop interpretive aids for Callow Memorial Trail; explore potential for extending Loess Bluff Trail; prepare new interpretive leaflets for species groups and Refuge resources and history; update existing leaflets; initiate contract for concept plan for a visitor center; remove picnic tables and grill from headquarters and replace with amphitheater; update the orientation video.	3.1 Objective: Interpretation – Same as Alternative A. <u>Strategies:</u> Same as Alternative C.	3.1 Objective: Interpretation – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.2 Objective: Environmental Education – Offer environmental education programs, materials and facilities that meet Service standards and accommodate visitation consistent with 2004 environmental education levels.</p> <p><u>Strategies:</u> Continue to offer interpretive programs, tours and demonstrations at current level.</p>	<p>3.2 Objective: Environmental Education – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.2 Objective: Environmental Education – Offer environmental education programs, materials and facilities that meet Service standards and accommodate up to 6,000 students annually by 2013. Evaluate the effectiveness of the environmental education program by 2013.</p> <p><u>Strategies:</u> Alert schools to Refuge resources; conduct an annual teacher workshop; develop accessible EE activities linked to local and state education standards; expand the visitor and office space in the headquarters building to enhance visitor services; expand the outdoor classroom facilities by adding a boardwalk with a learning station into a marsh area; add a seasonal clerk to staff the visitor contact station during peak public use periods; recruit and train volunteers to conduct activities.</p>	<p>3.2 Objective: Environmental Education – (Same as Alternative C)</p> <p><u>Strategies:</u> Same as Alternative C.</p>	<p>3.2 Objective: Environmental Education – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.3 Objective: Wildlife Observation and Photography – Maintain, improve and develop to Service standards facilities and programs to encourage more interactive visitor participation resulting in a higher quality outdoor experience, including an existing 10-mile circular auto tour route, the 2-mile Mallard Marsh Road and three walking trails. <u>Strategies:</u> Continue to participate in Eagle Days; maintain auto tour route.</p>	<p>3.3 Objective: Wildlife Observation and Photography – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.3 Objective: Wildlife Observation and Photography – Maintain, improve and develop to Service standards facilities and programs to encourage more interactive visitor participation resulting in a higher quality outdoor experience, including an existing 10-mile circular auto tour route, the 2-mile Mallard Marsh road and the three walking trails and, by 2013, an extension of the Callow Memorial Trail to form a looped trail with the Loess Bluff Trail and a one-quarter-mile boardwalk to a marsh. <u>Strategies:</u> Improve facilities, including upgrading the surface of the auto tour route and developing interpretation and an observation deck on the route, and replacing deteriorated restrooms; develop one or more accessible wildlife observation blinds for photographers and the general public; construct an accessible boardwalk into a marsh; maintain walking tours free of debris; create a two-way road between the start of the auto tour route and the Eagle Pool hiking trail; create pull-off areas on the auto tour route; post maps on kiosks.</p>	<p>3.3 Objective: Wildlife Observation and Photography – Same as Alternative C. <u>Strategies:</u> Same as Alternative C.</p>	<p>3.3 Objective: Wildlife Observation and Photography – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.4 Objective: Hunting and Fishing – Provide high quality recreational hunting opportunities for up to 135 deer hunters per season to help maintain healthy populations. Continue to allow bank fishing at various water control structures throughout the Refuge. <u>Strategies:</u> Continue muzzle-loading-only antlerless deer hunt; continue to allow fishing of limited fishery resource.</p>	<p>3.4 Objective: Hunting and Fishing – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.4 Objective: Hunting and Fishing – Same as Alternative A, with the addition of the spring goose hunt. <u>Strategies:</u> Continue monitoring the deer hunt; manage deer hunt to avoid conflicts with other uses and resources. Continue working with MDOC regarding deer hunt regulations. Continue to permit fishing at public access points. A managed spring Snow Goose hunt will be offered. Inform public when snagging of rough fish is permitted. Provide at least one accessible deer hunting blind with signage and parking space and develop reservation system.</p>	<p>3.4 Objective: Hunting and Fishing – Same as Alternative C. <u>Strategies:</u> Same as Alternative C.</p>	<p>3.4 Objective: Hunting and Fishing – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>
<p>3.5 Objective: Mushroom Gathering – Allow opportunities for mushroom gathering in selected areas. <u>Strategies:</u> Allow morel mushroom gathering in the Loess Bluffs by special permit; patrol areas closed to mushroom picking during gathering season.</p>	<p>3.5 Objective: Mushroom Gathering – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.5 Objective: Mushroom Gathering – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.5 Objective: Mushroom Gathering – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.5 Objective: Mushroom Gathering – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.6 Objective: Public Information – Refuge programs will continue to serve the traditional Refuge users as of 2004.</p> <p><u>Strategies:</u> Continue existing use of news releases to advertise events like Eagle Days and hunting program.</p>	<p>3.6 Objective: Public Information – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.6 Objective: Public Information – By 2025, 60 percent of people within 100 miles of the Refuge will be aware of the Refuge, its mission, its facilities and scheduled events. Emphasize reaching diverse groups of people who are not part of the traditional Refuge audience.</p> <p><u>Strategies:</u> Expand means of publicizing Refuge events to include electronic technologies and the Internet; ask visitors how they heard about events; provide a 24-hour telephone line with Refuge information; create and maintain an accessible website; maintain and update Refuge information at the I-29 rest stop; maintain current media list and distribute 35 news releases annually; continue coordination with St. Joseph Visitors and Convention Bureau; reinstate a public service slide show; explore use of highway billboards; develop informational brochures; participate in youth-oriented activities; work with Regional Office external affairs.</p>	<p>3.6 Objective: Public Information – Same as Alternative C.</p> <p><u>Strategies:</u> Same as Alternative C.</p>	<p>3.6 Objective: Public Information – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.7 Objective: Volunteers – Maintain volunteer program at 2004 level. <u>Strategies:</u> Continue to recruit volunteers for help with hand cutting invasive species and greeting visitors during Eagle Days at 2003 level.</p>	<p>3.7 Objective: Volunteers – 20 percent decrease in volunteer hours. <u>Strategies:</u></p>	<p>3.7 Objective: Volunteers – Increase the number of volunteer hours to 7,500 by 2013, with a 5 percent annual increase, to serve both in the Visitor Contact Station and around the Refuge as interpretive and educational guides and in supervised habitat management projects. <u>Strategies:</u> Increase volunteer recruitment efforts through web sites, news releases, public service ads, and work with civic groups; be actively involved in local Audubon chapters.</p>	<p>3.7 Objective: Volunteers – Same as Alternative C. <u>Strategies:</u> Same as Alternative C.</p>	<p>3.7 Objective: Volunteers – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>
<p>3.8 Objective: Friends of Squaw Creek NWR – Maintain and enhance a close working relationship with Friends of Squaw Creek NWR that helps foster common goals supporting the Refuge mission. <u>Strategies:</u> Continue to support Friends of Squaw Creek NWR and be actively involved by attending board meetings and providing advice and assistance.</p>	<p>3.8 Objective: Friends of Squaw Creek NWR – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.8 Objective: Friends of Squaw Creek NWR – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.8 Objective: Friends of Squaw Creek NWR – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>	<p>3.8 Objective: Friends of Squaw Creek NWR – Same as Alternative A. <u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.9 Objective: Government Agencies & Non-government Organizations – The 2004 level of involvement with NGOs and government agencies (see Chapter 5, Partnerships) will be maintained.</p> <p><u>Strategies:</u> Continue existing work with Natural Resources Conservation Service, Holt County Soil and Water Conservation District, and the U.S. Geological Survey to reduce sedimentation in the Refuge's watershed.</p>	<p>3.9 Objective: Government Agencies & Non-government Organizations – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.9 Objective: Government Agencies & Non-government Organizations – To increase awareness of and support for the Refuge, increase level of active cooperation with non-governmental organizations and governmental agencies on different aspects of on-Refuge and off-Refuge management and educational efforts, both in terms of the number of NGOs and the level of effort. The 2004 level of involvement with NGOs will be maintained, but additional efforts will be made to share Refuge information with these agencies and organizations during routine interactions with them.</p> <p><u>Strategies:</u> Continue work with traditional NGOs; continue to work with local Audubon societies; increase activity with the St. Joseph Visitor and Convention Bureau in promoting the Refuge and its activities; increase work with the Mound City Chamber of Commerce and local groups; actively look for partnering opportunities with other regional conservation groups, service organizations and educational institutions.</p>	<p>3.9 Objective: Government Agencies & Non-government Organizations – Same as Alternative C.</p> <p><u>Strategies:</u> Same as Alternative C.</p>	<p>3.9 Objective: Government Agencies & Non-government Organizations – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.10 Objective: Research Support – Actively encourage and provide technical assistance and logistical support to qualified researchers to support ongoing cooperative investigations of long-term management importance to the Refuge or that supports other compatible projects.</p> <p><u>Strategies:</u> Cooperate with the U.S. Geological Survey on a project studying stream flow and sedimentation; solicit assistance from additional partners; continue work with Missouri Western State College staff; continue research on the Eastern Massassauga rattlesnake; promote potential research opportunities in other forums and media; provide temporary housing to researchers when it is available.</p>	<p>3.10 Objective: Research Support – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.10 Objective: Research Support – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.10 Objective: Research Support – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.10 Objective: Research Support – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>
<p>3.11 Objective: Cultural Resources – Evaluate and preserve archaeological and historic resources.</p> <p><u>Strategies:</u> contract a survey to identify Native American sites; determine the status of farmstead buildings.</p>	<p>3.11 Objective: Cultural Resources – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.11 Objective: Cultural Resources – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.11 Objective: Cultural Resources – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.11 Objective: Cultural Resources – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

Alternative A: Current Management (No Action)	Alternative B: Restore Historic Wet and Mesic Prairie	Alternative C: Enhance Public Use With Current Resource Management Level	Alternative D: Optimize Resource Management With Enhanced Public Use (Preferred Alternative)	Alternative E: Intensive Wetland Management With Extreme Measures to Combat Sedimentation
<p>3.12 Objective: Health and Safety – Ensure the health and safety of visitors, volunteers, and employees and protect the natural resources and physical property of the Refuge. Strive for zero accidents for visitors and no accidents resulting in loss of work for employees.</p> <p><u>Strategies:</u> Add a full-time law enforcement officer and maintain credentials for a minimum of one collateral duty law enforcement officer; ensure that officers are fully trained and equipped; add a new electric gate at the Refuge entrance; complete a boundary survey on Munkre's tract; provide routine maintenance and an annual inspection of all Refuge facilities; replace or close facilities that compromise public safety; review permit, licenses and inspections annually; revise the station safety plan; conduct regular safety meetings; refresh staff in CPR and first aid techniques every 2 years; explore sanitary water services.</p>	<p>3.12 Objective: Health and Safety – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.12 Objective: Health and Safety – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.12 Objective: Health and Safety – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>	<p>3.12 Objective: Health and Safety – Same as Alternative A.</p> <p><u>Strategies:</u> Same as Alternative A.</p>

Squaw Creek NWR Objectives and Strategies by Alternative (Continued)

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<p>3.13 Objective: Welcome and Orient Visitors – Provide visitors with welcoming, comfortable experience through adequate guidance that does not detract from appreciating nature. <u>Strategies:</u> Enhance brochures and kiosks to include information relevant to a Refuge visit; revise and implement the station sign plan; indicate restrooms on Refuge location maps; install information and wayfinding signs per FWS Sign Handbook; enhance information provided in wayfinding signs; include information on sites and when and where sites can viewed on kiosks and maps; make the visitor center universally accessible; upgrade all orientation to be accessible to visitors with visual disabilities; identify and remove items that detract from naturalness; build pedestrian spaces at start of and along auto tour route; expand information provided along auto tour route; develop an accessible web site for the Refuge.</p>	<p>3.13 Objective: Welcome and Orient Visitors – Same as Alternative A. Strategies: Same as Alternative A.</p>	<p>3.13 Objective: Welcome and Orient Visitors – Same as Alternative A. Strategies: Same as Alternative A.</p>	<p>3.13 Objective: Welcome and Orient Visitors – Same as Alternative A. Strategies: Same as Alternative A.</p>	<p>3.13 Objective: Welcome and Orient Visitors – Same as Alternative A. Strategies: Same as Alternative A.</p>

